

# **\*\*ATTENTION\*\***

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**Marten**

*Martes americana*

**Range:**

The marten is currently found throughout the coniferous forests of Canada, Alaska, and the 11 western states except Arizona. To the east its range includes the northeastern United States from Northern Michigan along the Great Lakes states into the New England states then north to Maine. It was extirpated from the southeastern portion of its range between 1850 and 1875 and from adjacent areas by the early 1900's (Hagmeier 1956).

**Washington Distribution:**

Marten occur in many parts of Washington: the Olympic, Cascade, Selkirk, and Blue Mountains, the Okanogan Highlands, as well as the coastal mountains. Trapping records indicate their greatest numbers are in the Cascades, Selkirks, and the Okanogan Highlands.

**Habitat Requirements:**

Marten use a variety of forest communities, although the greatest density of martens occurs in mesic spruce subalpine fir communities older than 100 years with a canopy cover greater than 30 percent (Koehler et al. 1975). Mixed age forests provide hunting sites and protective cover in a variety of snow conditions and they support a more diverse number of prey species (Allen 1982; Hargis and McCullough 1984; Strickland et al. 1987). Allen (1982) prepared a habitat suitability index for the western states that indicated several important habitat requirements. The requirements include: greater than 30 percent canopy coverage of pole size or larger trees, greater than 25 percent coniferous trees, and 20 to 50 percent fallen trees and stumps as ground cover. Fallen trees and stumps are important because they provide marten with access to prey under the snow, and large, old trees and logs provide denning sites (Strickland et al. 1987). Martens also require snags, logs, or talus for resting purposes. A recent study in western Washington, indicates that marten prefer larger trees, snags and fallen trees for resting than studies conducted in other areas. This study also found that preferred canopy closure averaged 71%, which is much higher than other areas (Jones and Raphael 1990).

Marten are opportunistic feeders. They eat a variety of small mammals and plants. Studies in Alaska, Alberta, British Columbia, Idaho, Montana, and Wyoming have shown a high reliance on red-backed and meadow voles (Koehler et al. 1975). Microtine rodents make up a high percentage of the marten's diet as do snowshoe

hares. Ruffed grouse, squirrels, birds and their eggs, reptiles, insects, fruits, nuts, and berries may all constitute an important part of the marten's diet (Strickland et al. 1982).

Preferred winter feeding sites include mesic spruce-fir areas and areas near riparian zones and lakeshores. These areas tend to have high prey populations (Buskirk et al. 1989; Koehler et al. 1990). Jones and Raphael (1990) found that marten used riparian areas throughout the year in western Washington.

Home ranges vary widely, but are generally 1 to 16 square kilometers (0.5 to 6 square miles). Females tend to have small home ranges from 1 - 2.5 sq km (0.5 - 1 sq mi). Male home ranges are up to three times larger and may overlap with female marten. (Strickland and Douglas 1987)

#### Limiting Factors:

Extensive clearcutting of timber stands and major fires seriously reduce a forest's habitat value for marten. Clearcutting eliminates resting sites, hunting sites, and overhead cover for marten and also reduces their preferred prey species.

Grazing by domestic livestock has caused serious depletion of marten habitat in some areas by impacting native vegetation thus reducing prey species. In addition, excessive harvest has resulted in near extirpation of these easily trapped animals in many settled and accessible areas (Strickland et al. 1987).

#### Management Recommendations:

Maintaining forest diversity is particularly important. Large blocks of mature forest should be left undisturbed, and smaller blocks connected with forested corridors. High canopy closure can be maintained by selective cutting rather than clearcutting. Road closures following logging, or logging by aerial means, may also be needed (Koehler et al. 1975). In addition, trapping should be limited and fires controlled (Canadian Wildlife Service, 1977; Strickland and Douglas 1987).

Marten seldom use large clearcuts and severely burned areas. These sites may be useless for 15 years or longer depending on the regenerating abilities of the site (Steventon and Major 1982; Hargis and McCullough 1984; Clark et al. 1987; Strickland and Douglas 1987). Small burns and clearcuts however, may increase habitat values for marten because they provide habitat for prey species and good denning sites. For the long term, they may also help prevent catastrophic fires and habitat loss (Koehler et al. 1975).

Timber harvest criteria should include the use of small clearcuts, leaving timbered strips along waterways and connecting blocks of uncut timber. In addition, slash piles, large snags, and large downed logs should be left for resting and foraging areas.

The clearcuts should be less than 100 m (330') across with scattered clumps of

trees left to become future snags and downed logs. Slashpiles should be within 10 m (30') of forest canopy and should contain logs as large as 30 cm (12") (Spencer 1981)

In Newfoundland, Snyder (1984) found that blocks of mature timber should be at least 15 hectares (37 acres) and within 250 m (800') of each other. Strips at least 100 m (330') wide should be left along waterways. Soutiere's (1979) research in Maine indicated that at least 25 percent of the area should be left in mature timber with an accumulative basal area of at least 25 square meters of pole size or larger trees per hectare (100 sq ft per acre).

Road building, skidding, and other logging operations should be kept 60 m (200') from riparian areas (Spencer 1981). Road closures following logging operations may be needed to reduce concentrated trapping pressure or human disturbance (Koehler et al. 1975).

Livestock grazing should be controlled to maintain rodent populations. Forage of at least 1,500 kg dry weight per hectare (1300 lb. per acre) should remain after grazing. In addition, livestock should not be allowed to denude streambanks and should be excluded from fragile riparian areas. (Spencer 1981)

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#### Key Points:

##### Habitat Requirements:

- Old growth or mature forest on mesic sites with greater than 30 percent canopy cover.
- Large snags, numerous down logs, and small openings.
- High numbers of red-backed and meadow voles and other microtine rodents.
- Riparian zones and lakeshores remaining in mature forest.

##### Management Recommendations:

- Maintain at least 25 percent of a geographic area (e.g. drainage) in mature forest.
- Maintain mixed-age stands containing saplings, pole sized trees and mature timber in order to provide suitable cover over a wide range of snow depths and conditions.
- Use selective harvest techniques wherever possible to minimize large, unused clearings.
- Clearcuts should be less than 330' wide with clusters of trees spaced no farther than 160' apart to allow marten travel through these areas.
- Leave large snags and live trees, logs, and slash piles for foraging and denning sites within 30' of forest cover.
- Strips of timber should be left along waterways, including headwater

streams, and strips should connect timbered blocks.

- Roads should be closed after logging to minimize human impacts.